United States Patent [19]

Greeott

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[54] INVERTIBLE GARDEN SPRINKLER

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[51] **Int. Cl.**[2] **B05B 1/16**

[52] **U.S. Cl.** **239/443;** 239/393

[58] **Field of Search** 239/392, 393, 394, 443–449

[56] **References Cited**

U.S. PATENT DOCUMENTS

1,166,374	12/1915	Jackson	239/442
2,722,457	11/1955	Livingston	239/447
3,385,525	5/1968	Jacobs	239/394

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[57] **ABSTRACT**

A body is provided and supported from a base for oscillation relative thereto about a generally horizontal axis. The body is hollow and includes a tubular inlet neck opening outwardly from the interior thereof along a path at least closely adjacent and paralleling the axis of oscillation of the body. The outer end of the neck is adapted to have the discharge end of the water supply line coupled thereto and the body defines an elongated interior compartment into which the inlet neck opens. The compartment includes opposite end portions disposed on opposite sides of the inlet neck and each of the opposite end portions includes a valve seat facing toward the inlet neck. A gravity valve member is mounted in the body for gravity movement therein between positions in seated engagement with the seats and the body is oscillatable relative to the base between positions with the remote ends of the opposite end portions of the interior compartment disposed lowermost. The body further includes a pair of different spray-patterned sprinkler heads supported therefrom into which the opposite end portions of the cavity open and disposed downstream from the corresponding seats.

5 Claims, 6 Drawing Figures

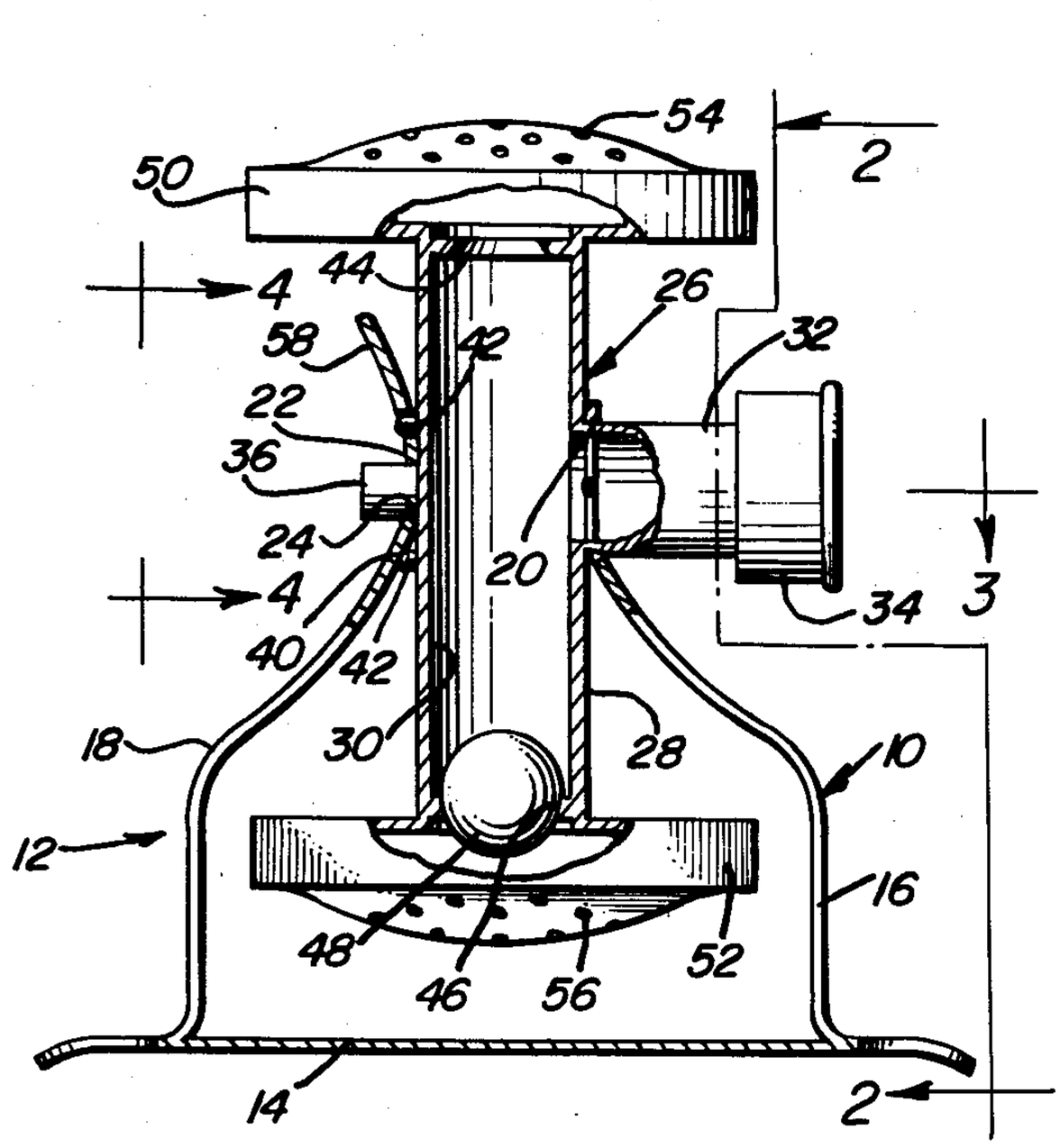


Fig. 4

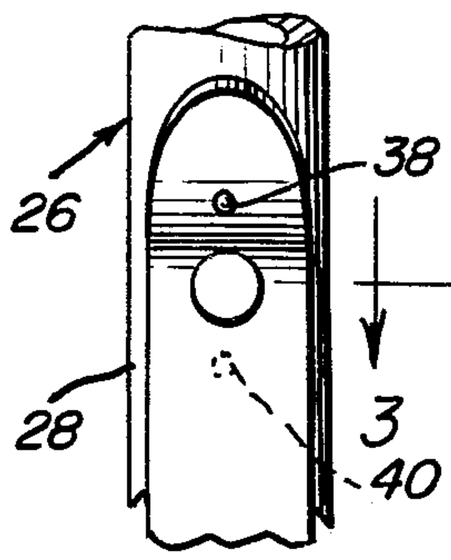


Fig. 1

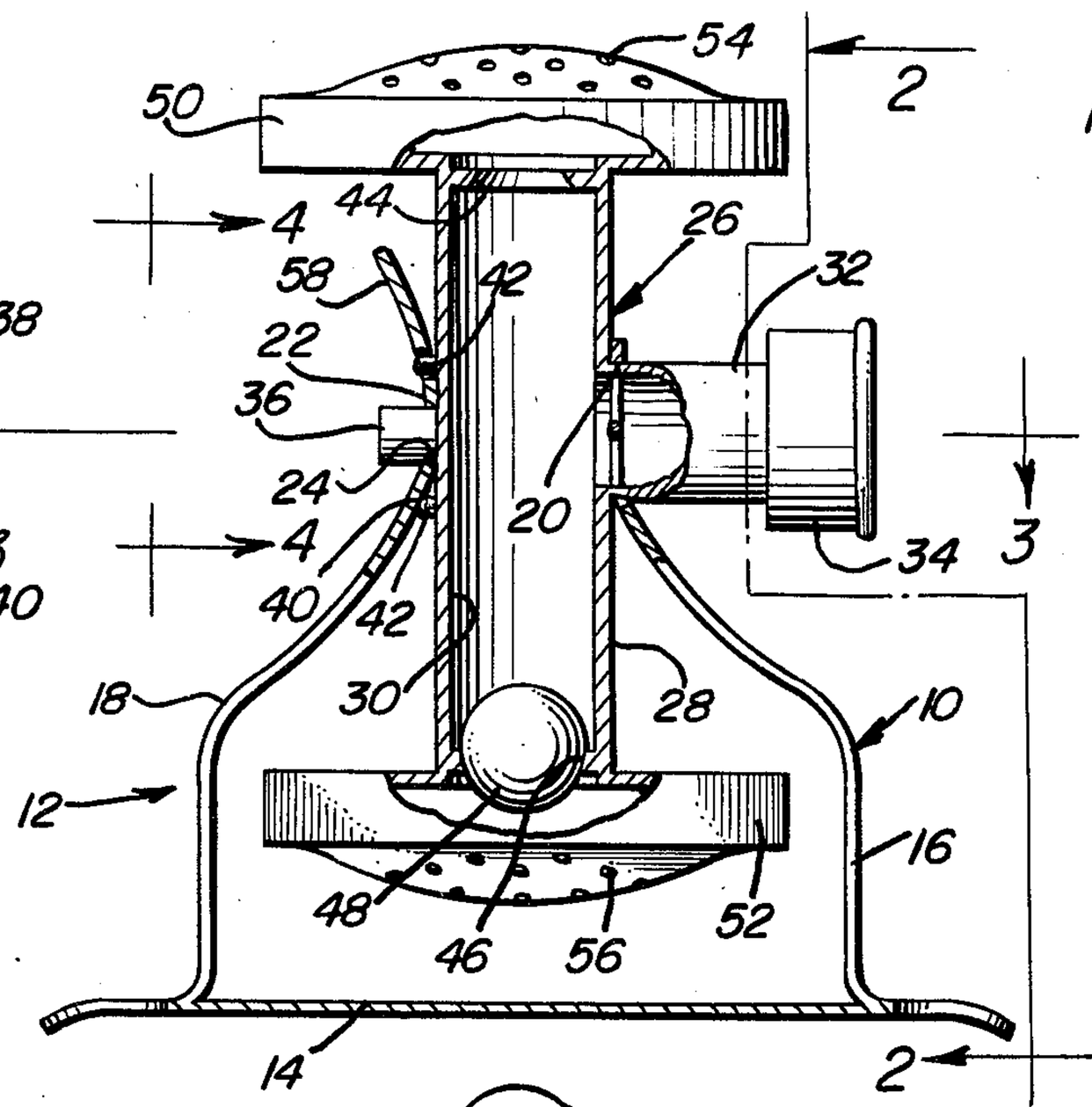


Fig. 3

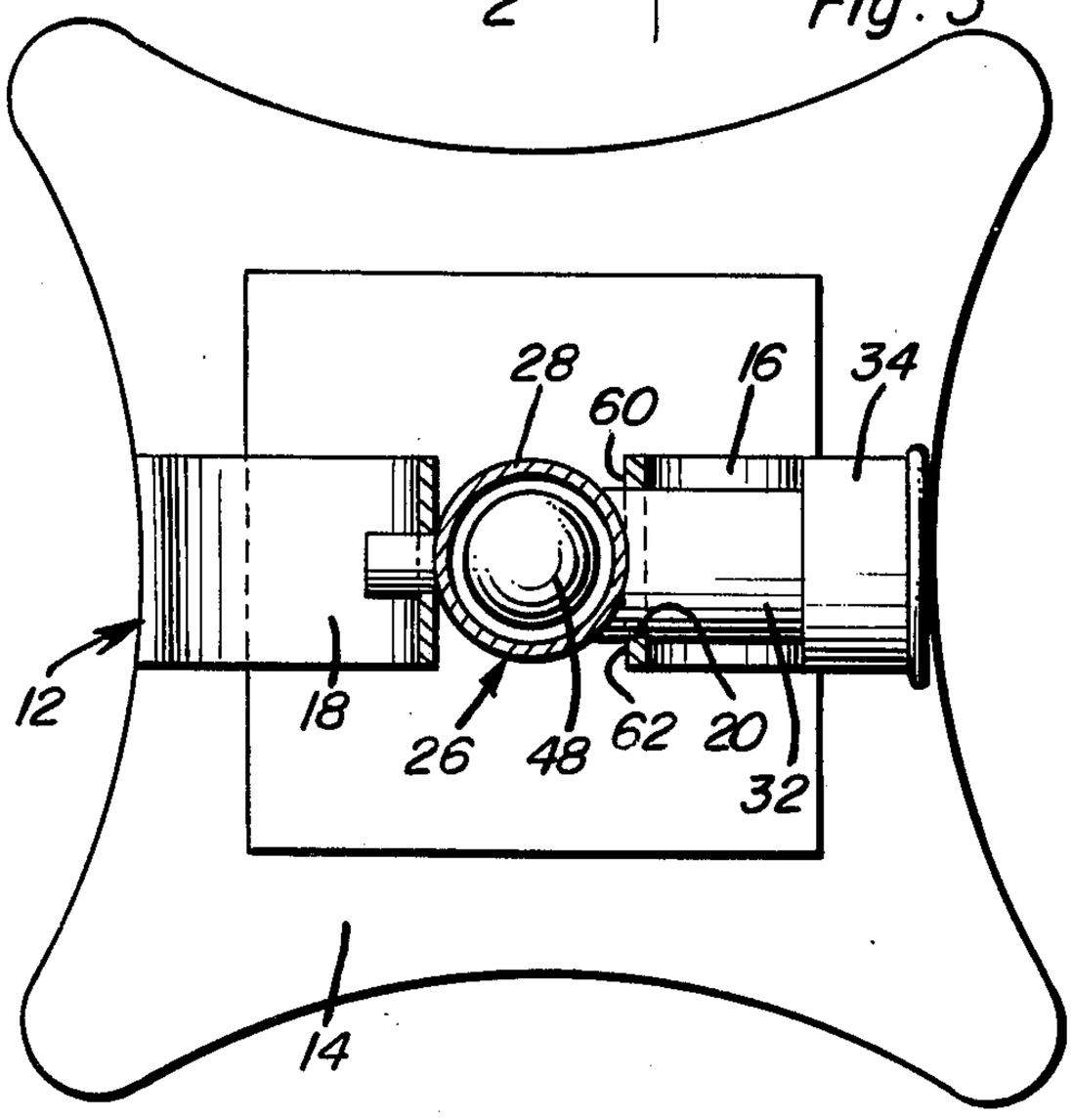


Fig. 2

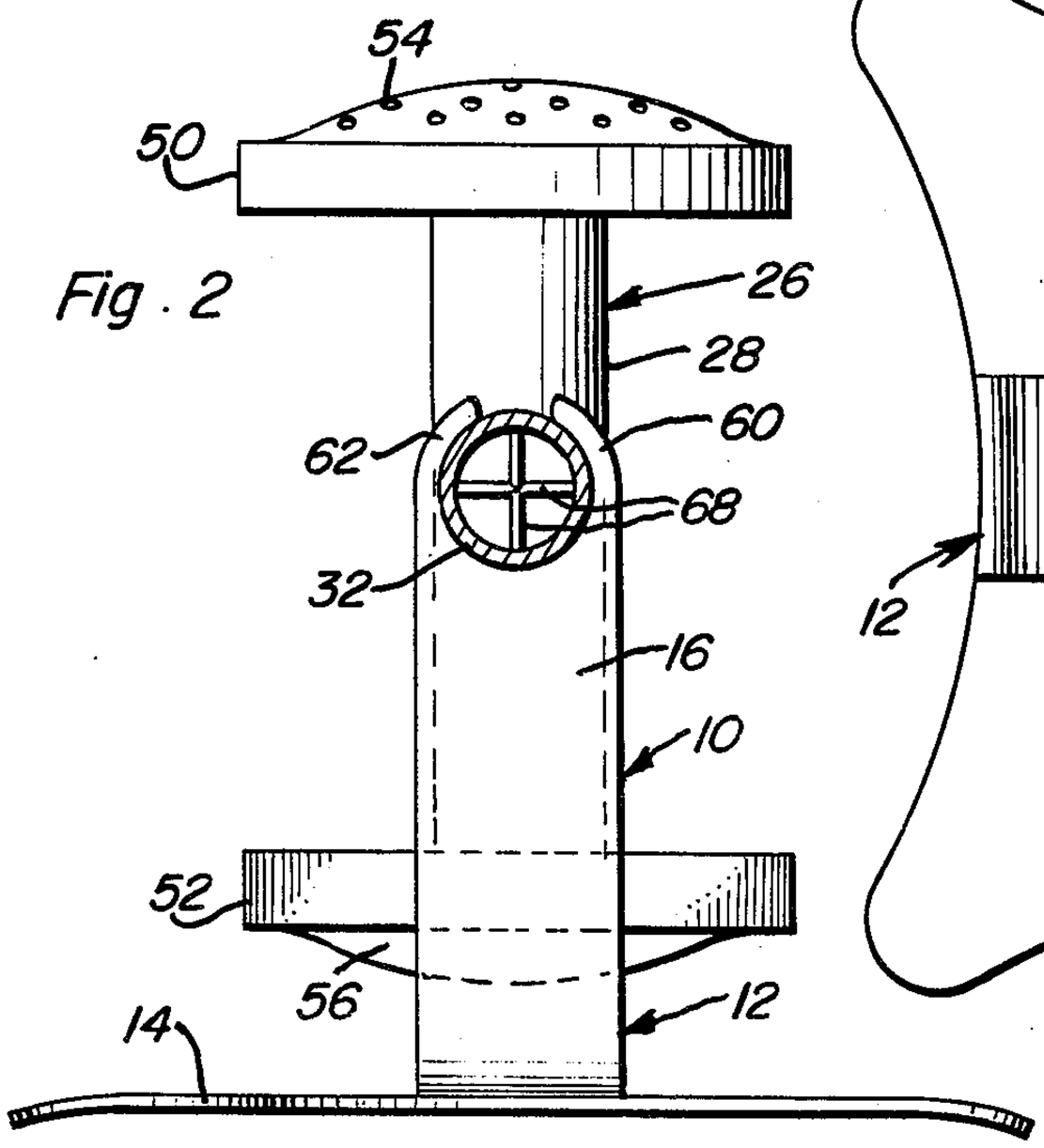


Fig. 6

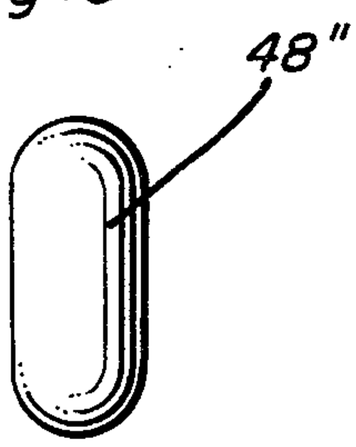
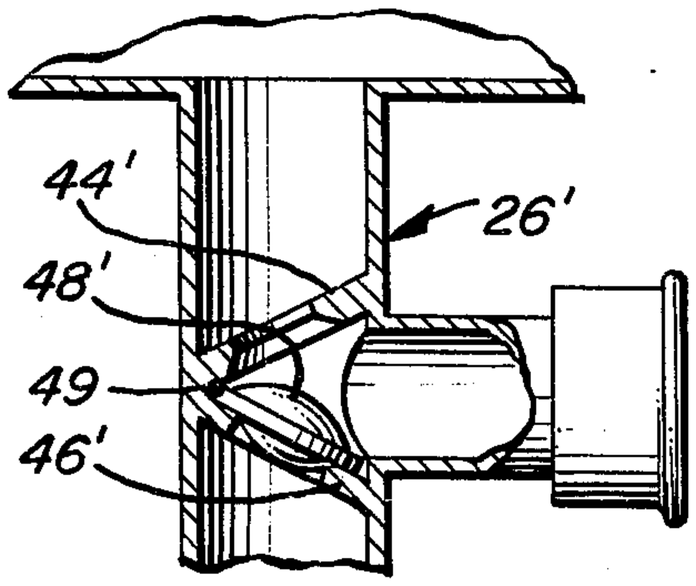


Fig. 5



INVERTIBLE GARDEN SPRINKLER

BACKGROUND OF THE INVENTION

There are many instances in which a person desires to alternately position a lawn or garden sprinkler in different locations in which it is desirable for the sprinkler to discharge different spray patterns of water therefrom. In these instances a person wishing to water a lawn or garden must successively utilize different sprinklers for the most advantageous application of water to the lawn or garden with a minimum amount of water wasted. Inasmuch as water, particularly in the summer months, is becoming scarce, a need exists whereby a relatively inexpensive garden or lawn sprinkler may be provided with means to selectively discharge different spray patterns of water therefrom.

Examples of the various forms of lawn and garden sprinklers including some of the general structural and operational features of the instant invention and which are operative to selectively discharge different spray patterns of water therefrom are disclosed in U.S. Pat. Nos. 1,544,521, 2,711,925, 3,081,950 and 3,385,525.

BRIEF DESCRIPTION OF THE INVENTION

The sprinkler of the instant invention a pair of remote sprinkler heads interconnected by means of a central elongated compartment within the body of the sprinkler and the sprinkler is mounted for rotation relative to a support base therefor in a manner such that the sprinkler heads may be alternatively disposed uppermost. In addition, the sprinkler includes an inlet neck which opens into the interior cavity or compartment of the body of the sprinkler and to which the outlet end of a water supply hose may be operably connected. Further, the interior of the sprinkler body includes a pair of valve seats upstream from the heads and downstream from the inlet neck and a valve member is shiftably supported within the body for gravity movement between positions in seated engagement with the seats. Accordingly, when one head of the body is disposed lowermost and the other head of the body is disposed uppermost, the valve member falls by gravity into seated engagement with the vavle seat controlling the flow of water from the inlet neck to the lowermost head. Accordingly, water supplied to the sprinkler head through the inlet neck thereof is discharged only from the uppermost sprinkler head. Of course, when the body is inverted and the previously lowermost head is disposed uppermost, the valve member falls by gravity into seated engagement with the seat controlling the flow of water to the previously uppermost head (now disposed lowermost). In this manner, the sprinkler of the instant invention may have the body thereof readily inverted in order to discharge a different spray pattern of water.

The main object of this invention is to provide a garden or lawn sprinkler which will be capable of selectively discharging different spray patterns of water therefrom.

Another object of this invention is to provide a sprinkler construction in accordance with the preceding object and including at least two different spray heads which may be alternately positioned uppermost for discharging a corresponding spray pattern of water from the sprinkler.

Another important object of this invention is to provide a sprinkler which may be readily equipped with a variety of different spray heads.

A final object of this invention to be specifically enumerated herein is to provide a lawn or garden sprinkler in accordance with the preceding objects and which will conform to conventional forms of manufacture, be of simple construction and easy to use so as to provide a device that will be economically feasible, long lasting and relatively trouble free in operation.

These, together with other objects and advantages which will become subsequently apparent, reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part thereof, wherein like numerals refer to like parts throughout.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a side elevational view of the sprinkler of the instant invention with portions thereof being broken away and illustrated in vertical sections;

FIG. **2** is a vertical sectional view taken substantially upon the plane indicated by the section line **2—2** of FIG. **1**;

FIG. **3** is a horizontal sectional view taken substantially upon the plane indicated by the section line **3—3** of FIG. **1**;

FIG. **4** is a fragmentary, vertical sectional view taken substantially upon the plane indicated by the section line **4—4** of FIG. **1**;

FIG. **5** is a fragmentary, vertical sectional view illustrating a modified form of sprinkler; and

FIG. **6** is a side elevational view illustrating a modified form of valve member which may be utilized in conjunction with the sprinkler illustrated in FIG. **1**.

DETAILED DESCRIPTION OF THE INVENTION

Referring now more specifically to the drawings, the numeral **10** generally designates a first form of sprinkler constructed in accordance with the present invention. The sprinkler **10** includes a base assembly referred to in general by the reference numeral **12**, and the base assembly includes a base plate **14** including opposite side upwardly convergent spring-type support arms **16** and **18**. The upper end of the support arm **16** is vertically disposed and includes a cylindrical horizontal opening **20** formed therethrough. The upper end portion of the support arm **18** includes a substantially vertical portion **22** and the vertical portion **22** has a horizontal cylindrical opening **24** formed therein of somewhat smaller diameter than the opening **20**.

The sprinkler **10** further includes a body referred to in general by the reference numeral **26** and the body **26** comprising an elongated tubular member **28** defining an elongated generally cylindrical compartment **30** therein. The tubular member **28** includes an integral tubular inlet neck **32** which opens into the longitudinal mid-portion of the compartment **30** and the outer end of the inlet neck **32** includes an integral internally threaded female coupling **34** into which the externally male end of a conventional garden hose may be threadedly secured.

The side of the tubular member **28** remote from the inlet neck **32** includes an outwardly projecting cylindrical support stud **36** axially aligned with the inlet neck **32** and the inlet neck **32** is rotatably received through the opening **20** and the stud **36** is rotatably received through

the opening **24**. In addition, the support arm **18** includes a small aperture **38** formed therein above the opening **24** and a small detent recess **40** formed within, on the side thereof opposing the support arm **16**, spaced below the opening **24**.

The portions of the support arm **16** and **18** through which the openings **20** and **22** are formed compressively engage the opposing opposite sides of the tubular member **28** of the body **26** therebetween and the tubular member **28** includes detent projections **42** above and below the support stud **36**. The detent projections **42** are selectively engageable in the aperture **38** and the recess **40** whereby the opposite ends of the tubular member **28** may be alternately disposed uppermost.

The opposite ends of the tubular member **28** include annular seats **44** and **46** which open toward the longitudinal mid-portion of the tubular member **28** and a spherical valve member **48** is freely received within the tubular member **28** for gravity movement between positions seated against the seats **44** and **46**. The end of the tubular member **28** adjacent seat **44** has a square pattern, hollow sprinkler head **50** supported therefrom and the end of the tubular member **28** adjacent the seat **46** has a hollow round pattern sprinkler head **52** supported therefrom. The seats **44** and **46** open directly into the heads **50** and **52** and the heads **50** and **52** include outlet openings **54** and **56**, respectively, therein through which water may be discharged from the heads **50** and **52** in square and round spray patterns, respectively.

In operation, the outlet end of the garden hose may be operably connected to the female coupling **34** and when the body **26** is in the position thereof illustrated in FIG. **1** of the drawings, the valve member **48** will fall by gravity into seated engagement with the seat **46** and all of the water admitted into the compartment **30** through the inlet neck **32** will be discharged from the openings or apertures **54** of the spray head **50**. On the other hand, if the upper end portion **58** of the support arm **18** is displaced outwardly from the tubular member **28**, the detent projections **42** will be unseated from the aperture **38** and the recess **40** and the body **26** may thereafter be rotated **180** degrees relative to the body assembly **12** whereby the head **52** will be disposed uppermost and the head **50** will be disposed lowermost. In this position, the valve member **48** falls by gravity into seated engagement with the seat **44** and all of the water admitted into the compartment **30** through the inlet neck **32** is discharged from the openings **56** of the head **52**.

The opening **20** is defined by a pair of opposite side arms **60** and **62** which are initially disposed in parallel relation before assembly of the body **26** to the base assembly **12**. When the arms **60** and **62** are in parallel relation, they define an upwardly opening U-shaped recess therebetween into which the inlet neck **32** is readily receivable. After the body **26** has been assembled to the base assembly **12**, the upper ends of the arms **60** and **62** are bent into the arcuate configurations thereof illustrated in FIG. **2** whereby the body **26** is permanently mounted to the base assembly **12**.

With reference now more specifically to FIG. **5** of the drawings, there will be seen a modified form of body referred to in general by the reference numeral **26'**. The body **26'** is generally similar to the body **26**, but includes modified oppositely angled seats **44'** and **46'** in lieu of the seats **44** and **46**. In addition, the body **26** includes a pivoted flap valve member **48'** instead of a spherical valve member such as the valve member **48**, and it is believed that it may be readily seen that the valve member **48'** may readily swing back and forth between positions in seated engagement with the seats **44'** and **46'**, the flap valve member **48'** being pivotally supported from the body **26'** as at **49**.

With reference now more specifically to FIG. **6** of the drawings, there may be seen a modified form of valve member **48''** which may be used in the body **26** in lieu of the valve member **48**. The valve member **28''** comprises an elongated cylindrical valve member including hemispherical opposite ends and it is believed obvious that the valve member **48** may also be loosely received within the compartment **30** for shifting longitudinally thereof into positions with the opposite ends of the valve member **48'** in seated engagement with the seats **40** and **46**.

In that form of the invention illustrated in FIGS. **1–4**, the innermost end of the inlet neck **32** includes internal crossed transverse bars **68** to prevent movement of the valve member **48** into the inlet neck **32**.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

What is claimed as new is as follows:

1. A sprinkler construction including a base, a body supported from said base for oscillation relative thereto about a generally horizontal axis, said body being hollow and including tubular inlet neck opening outwardly from the interior thereof along a path at least closely adjacent and paralleling said axis, the outer end of said neck being adapted to have the discharge end of a water supply line coupled thereto, said body defining an elongated interior compartment into which said neck opens and including opposite end portions disposed on opposite sides of said inlet neck, each of said opposite end portions including means defining a valve seat facing toward said inlet neck, a gravity valve member mounted in said body for gravity movement therein between positions in seated engagement with said seats, said body being oscillatable relative to said base between positions with the remote ends of said opposite end portions alternately lowermost, said body further including a pair of different spray pattern sprinkler heads supported therefrom into which said opposite end portions open and disposed downstream from the corresponding seats, said base including means defining a horizontal aperture and an upwardly opening notch spaced horizontally from and aligned with said aperture, said body including an outwardly projecting stud rotatably received in said aperture and on the side of said body remote from said inlet neck, said inlet neck being cradled in said notch for rotation therein, the upper end of said notch being defined between a pair of generally parallel arm portions of said body whose upper ends are curved toward each other over upper opposite side portions of said neck for retaining the latter in said notch.

2. The combination of claim **1** wherein said valve member comprises a spherical valve member freely movable through said compartment between said seats.

3. The combination of claim **1** wherein said valve member comprises a freely gravity shiftable elongated body having opposite end faces defining valve heads sealingly engageable with said seats.

4. A sprinkler construction including a base, a body supported from said base for oscillation relative thereto about a generally horizontal axis, said body being hollow and including tubular inlet neck opening outwardly from the interior thereof along a path at least closely adjacent and paralleling said axis, the outer end of said neck being adapted to have the discharge end of a water supply line coupled thereto, said body defining an elongated interior compartment into which said neck opens and including opposite end portions disposed on opposite sides of said inlet neck, each of said opposite end portions including means defining a valve seat facing toward said inlet neck, a gravity valve member mounted in said body for gravity movement therein between positions in seated engagement with said seats, said body being oscillatable relative to said base between positions with the remote ends of said opposite end portions alternately lowermost, said body further including a pair of different spray pattern sprinkler heads supported therefrom into which said opposite end portions open and disposed downstream from the corresponding seats, said elongated interior compartment being substantially longitudinally straight and said neck opens into a longitudinal mid-portion thereof, said seats being oppositely inclined relative to said path and said valve member comprises a pivoted valve member freely swingable to opposite sides of said path into engagement with said seats.

5. A sprinkler construction including a base, a body supported from said base for oscillation relative thereto about a generally horizontal axis, said body being hollow and including tubular inlet neck opening outwardly from the interior thereof along a path at least closely adjacent and paralleling said axis, the outer end of said neck being adapted to have the discharge end of a water supply line coupled thereto, said body defining an interior compartment having remote outlets disposed on opposite sides of said axis, each of said outlets including a spray head operatively associated therewith, a valve member gravity shiftable in said compartment, said body including seat means for controlling the flow of water from said inlet neck through said compartment and to said spray heads, said valve member including portions thereof, upon gravity shifting of said valve member, sealingly engageable with the seat controlling the flow of water to the lowermost head to terminate the flow of water thereto upon rotation of said body relative to said base with that spray head lowermost, said valve member comprising a flap-type valve member swingably supported within said compartment from said body for swinging gravity movement between positions seated against said seats.

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